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Article

The Trap of Success: A Paradox of Scale for Sharing Economy and Degrowth

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Abstract: Over the recent years, the sharing economy has been discussed as a community-based solution for a more sustainable future. Supported by the development of information technologies and defined by a large range of activities based on the access of underutilized resources over ownership, the sharing economy has been framed as a socio-economic model that is able to increase social bonding and collaboration and to reduce the inefficient allocation of resources. Within this framework, the sharing economy seems to align with the ideas of degrowth, broadly defined as a downscaling of production and consumption activities oriented to increase environmental quality and social collaboration. Despite the connections existing between them, no previous studies investigate the two concepts together. By considering the evidence provided by previous literature, this paper maps the links and similarities existing between sharing economy and degrowth and analyzes the discrepancies existing between the promises of the sharing economy and the impacts generated by practices. A paradox of scale, where the sharing activities fail to deliver as a consequence of success is also discussed together with future research directions. This paper contributes to the existing debate around alternative economic models and can support the design of sustainable practices.

Keywords: sharing economy; degrowth; socio-economic and environmental impacts; paradox of scale

1. Introduction

Fueled by the financial constraints and instability generated by the global financial crisis of 2008, the sharing economy has emerged as a collaborative consumption model that radically changed the way of using resources [1]. Built around the use of digital platforms, peer-to-peer relations, and temporary access rather than ownership, the sharing economy is usually described as an umbrella for a wide set of profit and non-profit activities, ranging between accommodation, transport solutions, and crowdfunding initiatives. Based on the idea that underutilized resources can be shared among consumers, the sharing economy has generally been framed as a system that is able to contribute to a transition toward a more sustainable future. In particular, the sharing economy has been described around three main pillars, namely: *i*) Enabling greater efficiency and access; *ii*) decentralizing and disrupting the established economic structure; and *iii*) empowering citizens and communities [1–4]. Within this context, the sharing economy seems to align to the main goals proposed by degrowth. Based on the idea that the present economic system is unable to deal with resource scarcity and well-being, the theory of degrowth proposes a “downscaling of production and consumption activities that increase human well-being and enhance ecological conditions” [5]. Built around the extensive debate on the limits to growth [6,7] and around the idea that social cohesion and a sense of community are important determinants of well-being [8,9], the theory of degrowth has similarities to the way in which the sharing economy has been framed. In addition, the idea of participative democracy, oriented to reduce the undemocratic control of corporation and elites is in line with the objectives of sharing platforms based on open access, open source, and a collaborative

software movement [10,11]. During the last decade, extensive academic debates have been focused on the theoretical definitions of degrowth and a large set of bottom-up initiatives have also been put in place [12–17]. When compared to the sharing economy, however, the overall application of degrowth seems to be on a much more embryonal phase. Within this context, the analysis of the sustainability challenges of sharing can then be used to identify the possible constraints that degrowth could face. That is because, the recent development of the sharing practices and the related value chain expansion, have highlighted a large set of contradictions existing between the way in which the sharing economy has been framed and the impacts generated by practices [18]. The aim of the paper is then to summarize and discuss the existing evidence around the sustainability challenges of sharing and to hypothesize a paradox of scale, where alternative economic models fail to deliver as a consequence of success. Future research directions and implications are also discussed.

The present paper contributes to the existing literature in different ways. Firstly, it provides the first mapping exercises of the links and similarities characterizing the sharing economy and degrowth. Secondly, by considering the evidence provided by previous literature, the paper presents a summary of the contradictions of the sharing economy in the field of sustainability. Thirdly, it hypothesizes and discusses a paradox of scale, highlighting the risks of large-scale applications of alternative economic practices. Finally, it identifies the areas where academic researches and policy interventions would be needed to investigate and mitigate the negative impacts of the sharing economy and degrowth. The sustainability implications considered in this paper can also contribute to influencing the perspective of managers and policymakers, by making them aware of the possible downside of the alternative economic solutions. The paper is structured as follows: Section 2 includes the research questions and method. Section 3 presents the results. Section 4 includes discussions and future research directions. Finally, conclusions are given in Section 5.

2. Research Questions and Method

As reported above, the main objective of this paper is to analyze the sustainability challenges of sharing and to hypothesize a paradox of scale where alternative economic models fail to deliver as a consequence of success. To this purpose, a thematic analysis of the existing literature has been used to address the following research questions:

1. What theoretical frameworks have been used to define the sharing economy and degrowth?
2. What are the links and similarities existing between them?
3. What are the main discrepancies existing between the way in which the sharing economy has been framed and the outcomes generated by practices?

Following the approach previously used in [19,20], the definition of the research questions has been followed by three additional steps: Literature search; content evaluation and analysis; presentation of findings. By considering combinations of different strings of keywords (such as: Sharing economy, Collaborative economy; Gig economy; Peer-to-peer; Access-based consumption; Degrowth; De-growth), peer-review papers, conferences proceedings, book chapters, and reports have been identified using the Web of Science (WoS) database and the Google search engine. Only English-language studies have been included into the research and no boundaries have been defined for publication dates, although attention has been given to the most recent researches and practices. The thematic analysis, has then been structured based on the following steps:

- Initial screening of the collected material: The information included in the publication title, abstract, and conclusion has been read to identify the relevance of the publication outlet;
- Selection of studies: The most relevant material has then been selected and as a procedural practice, when different studies use theoretical frameworks without significant differences, only one has been retained;
- Content analysis: By reviewing the full text of the selected material, the spectrum of theoretical frameworks used to define the sharing economy and degrowth has been grouped according to the three sustainability dimensions, namely: Economic, social, and environmental;

- Mapping: By using a qualitative deductive analysis, the links and similarities existing between sharing economy and degrowth have been identified in line with the three sustainability dimensions reported above;
- Outcome of practices: A qualitative inductive reading of texts has been used to identify the outcomes generated by practices;
- Identification of discrepancies: The main discrepancies existing between the way in which the sharing economy has been framed and the outcomes generated by practices have been identified.

Findings are presented in the following section. In particular, research questions 1 and 2 are addressed in Section 3.1, where the sustainability dimensions used for the theoretical frameworks are analyzed together with the links and similarities existing between sharing economy and degrowth. In Section 3.2, the third research question is addressed by presenting the main discrepancies existing between the way in which the sharing economy has been framed and the impacts generated by practices. The evidence provided has then been used in Section 4 to introduce a paradox of scale where alternative economic models fail to deliver as a consequence of success.

3. Results

3.1. Sharing Economy and Degrowth: Mapping Links and Similarities

The sharing economy is a relatively new socio-economic phenomenon developed alongside the growth of information technologies. Generally defined as an umbrella for a wide range of heterogeneous practices, the sharing economy has been interchangeably used together with a large set of related labels, such as collaborative, peer-to-peer and access-based consumption [1,21–23], and peer-to-peer and platform economy. By including a large set of activities, together with a diverse range of sectors, the sharing economy has often been framed around the use of examples and classifications [24–26]. Following the definition proposed by [27], that divide the sharing economy into three main categories, namely:

- A product service system where members shared products that are owned by companies or by private persons (e.g., Airbnb, Uber, Zipcar);
- A redistribution market, focused on re-ownership of products (e.g., NeighborGoods, Freegle, Freecycle);
- A collaborative lifestyles environment in which people share similar interests, money, space, abilities, and time (e.g., Kickstarter, TaskRabbit, Timebanking).

The present paper refers to the sharing economy as the large set of activities built around the development of information technologies and oriented to share the use of abilities and resources. In Table 1, examples of sharing activities are provided together with examples of actors.

Table 1. Sharing economy: Examples of activities and actors.

Activities	Actors
Transport	Zipcar, Uber, car2go, BlaBlaCar, GoCarShare, GoGet, CarNextDoor, GoCatch, Zazcar, Locomute
Property	Airbnb, Noirbnb, Couchsurfing, GuestToGuest, Fairbnb
Food distribution	Deliveroo, EatWith, UberEATS, JustEat, foodpanda, hungryhouse
Goods	NeighborGoods, Freegle, Freecycle
Services	TaskRabbit, Needto.com, Ayoudo, Timebanking
Crowdfunding	Kickstarter, GoFundMe, Indiegogo, CircleUp

Source: Author elaboration.

The inclusion of a wide range of for-profit and not-for-profit activities, together with the large set of socio-economic and environmental impacts, however, makes it difficult to have a clear overview of the sustainability implications of sharing [3,28]. The idea of collaborative consumption, where “participants conduct sharing activities in the form of renting, lending, trading, bartering and swapping of goods, services, transportation solutions, space or money” [29] (p.193), for example,

seems to be in contrast with the recent developments of the sharing practices. The increasing number of for-profit activities and the large amount of income generated by businesses such as Airbnb, Uber, or TaskRabbit highlights a tension between the idea of a more sustainable and altruistic economy and a new form of capitalism developed alongside the growth of information technologies [30,31].

In spite of the publication of papers oriented to investigate how the mechanisms of the sharing economy and the related “socially-progressive feel-good rhetoric” [10] (p.3) have been used by companies to increase profit and market share [3,32], most of the literature still frames the sharing activities as a collaborative consumption model that is able to produce a more sustainable and socially connected economic system [10]. Within this context, Figure 1 summarizes the main frameworks that have been used to define the sharing economy, in line with the three sustainability dimensions.



Figure 1. Sustainability dimensions of the framework of sharing economy (source: Author elaboration).

In particular:

- **Economic**—Sharing economy as a business model that is able to decentralize and disrupt the traditional way of doing business: The use of internet platforms, the related development of crowdfunding initiatives, and the increasing accessibility of underutilized assets, have been described as opportunities to empower individuals and promote the development of micro-entrepreneurs [2]. The possibility to trade outside the traditional market system, where large corporations and bureaucracy drive the market dynamics, contributed to shape the idea that the sharing economy can disrupt the traditional way of doing businesses by increasing income possibilities and opportunities [1,33]. In addition, the use of peer-to-peer platforms and the related reduction of searching and transaction costs are considered as an important element of savings, income redistribution, and wealth [34,35].
- **Social**—Sharing economy as a pathway to increase social bonding and collaboration: Sharing one’s possession with others is generally defined as a pro-social behavior able to increase the feeling of solidarity and sense of community [36–39]. Airbnb and the Couchsurfing providers, for example, are described as activities to engage in personal relationships and promote the development of connections, solidarity, and trust. In addition, the use of online platforms, open access, and the peer-to-peer review can contribute to changing the traditional form of sharing: From being confined among trusted individuals, such as family and friends, to be extended to people who do not know each other [40]. Within this framework, the sharing economy has been considered as a tool to promote a more convivial and participatory society [41–43].
- **Environmental**—Sharing economy as a more sustainable form of consumption: According to [1], the sharing economy enables the access of underutilized resources and contributes to a transition toward a more sustainable future. Based on the idea of temporary access over ownership, the sharing economy provides consumers with the opportunity to use the excess capacity embedded into shareable goods. Defined by [44] as goods that are not used by the owner all the time, the shareable goods have an idle capacity that can be temporarily granted to other consumers. Typical examples are houses, cars, clothing, appliances, books, or furniture [10]. Within this

context, the sharing economy is supposed to contribute to optimize the use of assets and to disrupt the unsustainable practices of hyper-consumption [4,45].

Based on the way in which these three organizing cores have been framed, the sharing economy seems to align with the ideas proposed by degrowth. Described by [46] as an “umbrella keyword” for concepts and initiatives challenging the hegemony of hyper-consumption and promoting a participatory and ecologically sustainable society [47,48], the concept of degrowth has emerged as a powerful slogan particularly after the global financial crisis of 2008 [49,50]. Based on the extensive literature supporting the idea that: *i)* The Western standards of consumption are detrimental for the environment and that *ii)* wealth accumulation does not seem to be able to increase social cohesion and well-being; the theory of degrowth challenges the mainstream socio-economic approach and promotes a “different balance of material and non-material forms of prosperity: Time prosperity, relational goods (friendship, neighborliness, etc.), non-capitalistic, community-based form of production, exchange and consumption” [51] (p. 2). Ranging between models of living and interdisciplinary researches, degrowth is a vibrant topic of debate, shaped through academic analysis, political initiatives, and social grassroots movements [52,53].

In Figure 2, the main frameworks that have been used to define degrowth are summarized in line with the three sustainability dimensions previously used for the sharing economy.



Figure 2. Sustainability dimensions and framework of degrowth (source: Author elaboration).

- **Economic**—Degrowth economy as an economic structure that is able to redistribute income and wealth both within and between countries: Following the financial crisis of 2008, the long-standing debate around poverty and inequality has experienced a strong revival. The recent publication of studies showing how economic growth has not been able to generate an equal distribution of wealth, has spurred the debate on alternative development models [54,55]. Built around the idea that the GDP increase cannot be considered as a proxy of equality and well-being, the theory of degrowth criticizes the growth-oriented pathway of the capitalist system. Based on a large corporation and growth-or-die competition, the present system of production is leading to socio-economic disparities and wealth concentration in the hands of a few [46]. The promotion of small and local enterprises, together with social security improvements, common management of resources, and redistributive taxation schemes are considered as a possible solution to promote a more equal and socially sustainable system [56].
- **Social**—Degrowth economy as a pathway to promote the transition from a materialistic to a convivial and participatory society: Based on the idea that human well-being is a multidimensional concept where social relationships play an important role in the definition of happiness, the theory of degrowth proposes a socio-economic system oriented to increase social interactions, community support, and conviviality. Built around the works of [57–60], the transition toward a more socially oriented society should involve a downshifted lifestyle based on sharing and reciprocity. Cohousing, local currencies, and time-banks are examples of practices implemented to reduce hyper-consumption and to increase social bonding and collaboration [61,62]. In addition, the development of information and communication

technologies can support the implementation of participatory projects (e.g., online consultation and e-voting) used to foster democracy, civic consciousness, and political involvement [63,64].

- **Environmental—Degrowth economy** as a more sustainable form of production and consumption: Since the paradigm of sustainable economic growth has proven to be unable to reduce resources depletion and pollution, the theory of degrowth challenges the hegemony of growth and proposes to live well with less. Built around the debate on the “limits to growth” and around the idea that economic activity is a subsystem of the environment, degrowth proposes a radical downscaling of production and consumption [6,7,65–68]. The idea of “voluntary simplicity”, defined as a reduction of material needs and personal assets is a fundamental element to describe the transition toward degrowth. According to [48] (p. 4), “Degrowth signifies a society with a smaller metabolism, but more importantly, a society with a metabolism that has a different structure and serves new functions”. Within this context, the reduction of material consumption is not intended as deprivation or crisis, but it is viewed as a different form of using goods and services. Reciprocity, sharing, and efficient allocation of the idle capacity are examples of practices that are able to reduce consumption without sacrificing well-being [60,62,69].

In Table 2, the common promises of sharing economy and degrowth are summarized in line with the sustainability dimensions of Figures 1 and 2.

Table 2. Sharing economy and degrowth: Sustainability dimensions and promises.

Sustainability dimensions	Promises
Economic	<p>The development of internet platforms and the possibility to trade outside the traditional market system is expected to:</p> <ul style="list-style-type: none"> A. Disrupt centralized institutions and large corporations B. Encourage small and local enterprises C. Empower individuals by promoting flexible employment opportunities and additional sources of income D. Promote cheaper and easiest access to goods and services and provide opportunities for income redistribution, revenue, and saving
Social	<p>The promotion of peer-to-peer and community exchange is expected to:</p> <ul style="list-style-type: none"> A. Increase social bonding and collaboration B. Increase social equality and community trust C. Networking increase D. Promote the use of participative online resources such as open access, open sources, and collaborative platform
Environmental	<p>Moving from private ownership to the temporary access of underutilized resources, the sharing economy is expected to:</p> <ul style="list-style-type: none"> A. Reduce consumption B. Reduce the energy and material demand by promoting reuse, collaborative consumption, and swapping C. Promote reuse and responsible consumption

Source: Author elaboration.

From a theoretical perspective, if large similarities exist between sharing economy and degrowth, then extensive discrepancies occur in the way in which these two concepts are applied. As reported above, the sharing economy is a worldwide phenomenon rapidly growing across sectors and activities. Degrowth, on the contrary, has been developed through a model of living and academic debate and, up to now, a limited number of applications have taken place [50]. One of the inhibiting factors can be related to the difficulties in applying an alternative model in a system when the profit-oriented logic drives the main socio-economic dynamics. For this reason, a consistent overview of the possible implications generated by large-scale applications of degrowth is still missing. Given the fact that degrowth ideas could generate effective transformations only when adopted by the largest part of consumers, a specific analysis would be needed to investigate the impacts and feasibility of large-scale applications. Within this context, the main objective of the next sections is to hypothesize and discuss a paradox of scale, potentially able to drive the failure of

alternative economic models. Given the fact that, from a theoretical perspective, many similarities exist between sharing economy and degrowth, the next approximate is the sharing economy as a large-scale application of degrowth. In particular, the main contradictions existing between the promises of the sharing economy and degrowth, are compared to the outcomes generated by practices. The discrepancies are then used to discuss the feasibility of large-scale applications of alternative economic models, such as degrowth. Being aware that the approximations used in this paper inevitably lead to simplifications, the objective of this analysis aligns with the idea previously discussed in other publications [50,69,70]. Testing the degrowth hypothesis through modeling and empirical assessments can contribute to develop the debate around sustainable transitions to build the bridge between academic discourse, socio-political initiatives, and business environment.

3.2. Promises versus Outcomes of Practices: Analysis of the Socio-Economic and Environmental Impacts

Following the approach previously used by other papers [3,30], the main frames used to define the sharing economy are compared, in this section, with the socio-economic and environmental impacts generated by practices. The main objective is to identify existing tensions and to discuss the sustainability challenges of sharing.

Starting from the analytical framework reported in Table 2, the main discrepancies existing between promises and practices are reported below. In Table 3, the main elements of discussion are summarized.

3.3. Economic Dimension: Promises versus Impacts of Practices:

- A. Disrupt centralized institutions and large corporations versus creation of oligopolies: According to previous studies [26,28,30,71], the network externalities and economies of scale generated using Internet platforms, has facilitated the development of oligopolies and has reduced the market for small and local enterprises. In line with the examples reported in Table 1, most of the sharing economy's submarkets tend to be dominated by a small number of companies that earned the dominating status by designing a specific business model or through an early market entry. The large quantity of transactions, needed to compensate the costs of technological investments, has converged the successful platform toward oligopolistic structures, clearly in contrast with the idea of "disrupt centralized institutions and large corporations" included as one of the promises of sharing [72,73].
- B. Encourage small and local enterprise versus small-business competition: Instead of promoting small and local enterprises, the sharing economy has resulted in increased competition [74]. The development of sharing accommodation practices, such as Airbnb or Couchsurfing, for example, has provided a substitute for hotel nights in the cheaper segment of the market and has radically changed consumers' preferences and behavior. According to [75], the users of the sharing economy (generally looking for cheaper solutions, local authenticity, and more unique experiences) have shifted the demand from the traditional hotel industry toward the sharing hospitality. Therefore, the market share of the small and family-run accommodations has been reduced. In addition, the possibility to supply accommodation without the need to be compliant with the regulations affecting the hospitality sector (such as fire, health and safety standards, and taxation) represents an element of unfair competition affecting the small businesses operating in the market. The lower costs associated with a lack of standards and regulations, has contributed to drive a reduction in the average hospitality price. According to data provided by [76], the increased competition among small accommodation providers has generated 8%–10% revenue loss in the hotel sector in Austin, Texas. In a similar way, the estimation provided by [77] calculated that the 416,000 guests staying in Airbnb in July 2013 has generated around one million lost room nights for city hotels in New York. On the contrary, large corporations, offering hospitality solutions for business travelers, medium-high income consumers, and package holidays do not seem to be significantly affected [76,77].
- C. Empowering individuals by promoting flexible employment opportunities and additional sources of income versus working-related uncertainties: The sharing economy has framed itself

as a provider of flexible employment opportunities, where traditional employment contracts are substituted by short-term and freelance work [78]. The main implications of this working structure, however, seem to benefit businesses more than workers. Classifying workers as independent contractors, allow businesses to reduce the costs and to remove the legal liability for accidents arising at work. The lack of pension and insurance, together with income instability and insecurities is, on the contrary, one of the main downsides affecting the workers involved in the sharing economy's markets [79,80]. In addition, the rapid expansion of this underregulated and underpaid working logic, is also affecting the traditional working markets. When an increasing number of agents get involved in the logic of less security and more flexibility, the overall working conditions can decline [81–83]. As reported by De Stefano [81] (p.6), “extreme flexibility, shifting of risks to workers and income instability have long become a reality for a portion of the workforce in current labor markets that goes far beyond the persons employed in the gig-economy.” It can indeed be argued that working on collaborative platforms is part of a much vaster trend toward the casualization of labor [84,85].

- D. Promote cheaper and easiest access to goods and services and provide opportunities for income redistribution, revenue, and savings versus prices increase, income disparities, and tax avoidance: As reported above, the easiest and cheapest access to goods and services has been described as an opportunity to increase consumption possibilities, particularly for the lowest-income categories. When considering the supply side of the sharing practices, however, the sharing economy can contribute to amplifying the income disparities existing in society [86]. As reported by [87], for example, the additional revenue generated by sharing accommodation benefits people with a middle or upper-income level. That is because, the lower-income categories, characterized by a limited availability of goods to share, are typically excluded from the supply side of the market. Sharing accommodation, has also been criticized for the negative impacts generated on the price of the long-term renting accommodation. The increase in profitability of short-term renting has driven a reduction of long-term renting supply, with consequent impacts for the lower-income categories living in rented accommodation. According to data provided by [88], the average renting price in New York has increased by 11% between 2005 and 2012, with an average income rise of just 2%. The redistributive factors of the sharing activities have also been largely criticized in relation to taxation. According to data provided by [89], the sharing economy was estimated to be worth about \$15 billion in 2015 with the potential to grow to £\$335 billion in 2025. The amount of tax collected, however, is limited and controversial. Airbnb, for example, is financially located in Ireland, where the money made from transactions taking place all over the world are collected. The lack of clear accountability and the related difficulties to track income, make tax avoidance an element of unfair market competition and a major social issue. The unclear international regulation and the difficulties in public surveillance, creates a clear opportunity for fiscal avoidance, with consequent implications for social disparities and redistribution [28,72]. In addition, as reported by [10], the fact that platforms do not give governments the access to transactions and user data does not facilitate the enforcement of regulations and the design of clear and consistent taxation systems. The creation of institutional boundaries, such as the cap in the number of nights offered in sharing accommodation is, for example, difficult to apply without a clear track of users and suppliers.

3.4. Social Dimension: Promises versus Impacts of Practices

- A. Increase social bonding and collaboration versus social drivers' reduction: As reported above, the sharing economy has often been described as a tool to generate a new form of collaborations, solidarity, and social bonding [34,90–93]. Researches have, however, highlighted that most of the sharing economy users have no desire to increase community bonds or to share communal links with other members [29]. The ability of platforms to create social connections seems also to have decreased over scale and time. According to studies published by [94,95], when a market expands, economic reasons prevail, and interpersonal connections became more casual and less

durable. In a similar way, an analysis investigating the main car sharing motivations highlight that opportunistic and self-interest behaviors play a much more significant role than socio-environmental motivations [79]. Price convenience, savings, and accessibility seem to be the main factors driving most of the consumers' choices toward sharing economy options [96–98].

- B. Increase conviviality and community trust versus discrimination: Instead of increasing social equality and community trust, the sharing economy seems to be characterized by some degree of exclusionary and discriminatory behaviors [40]. Based on studies published [99–102], prejudicial discriminations in ratings and reviews have been found for Afro-American guests and Afro-American Airbnb owners and Uber drivers have reported to be discriminated in terms of longer average waiting times and more frequent cancellations.
- C. Networking increases versus reduction of face-to-face interactions: When the market expands and more profit-oriented actors enter in the sharing economy's businesses, the social contacts and face-to-face interactions seem to reduce. The increasing use of online quality ratings, for example, contributes to the declining importance of personal relationships. In addition, the introduction of technological innovations, such as the smart locks on sharing accommodation, provides users with a digital service of check-in and key handover that allow for a complete avoidance of social interactions [10]. According to [103], 75% of Airbnb's overall revenue come from rentals where the owners do not share the space with users. The initial idea of social connections, interactions, and trust have been taken over by activities operating with a small degree of social and face-to-face interactions.
- D. Promote the use of participative online resources such as open access, open sources, and collaborative platform versus income, cultural, and aging constraints: The development of information and communication technologies has been considered as an opportunity to facilitate the use of participative online resources and to democratize the access to information. However, the difficulties that a relevant percentage of the world population are experiencing in catching-up with technological development is de facto an element of exclusion for a large amount of people with income, cultural, and ageing constraints [104]. When applied to the context of the sharing activities, this general downside of information and communication technologies, can then exclude a specific group of people from participating in sharing exchanges. According to [75], for example 53% of the users are under 40 years old and across all the sharing economy industries the usage seems to decrease with an increasing age.

3.5. Environmental Dimension: Promises versus Impacts of Practices

- A. Reduce consumption versus consumption increase: As highlighted by [105], a relative cost reduction can increase the overall market demand. In the sharing economy, different elements can contribute to generate a "rebound effect" detrimental for resources:
 - The development of the sharing economy platforms and the creation of new markets expand the volume of commerce and inject additional purchasing power into the economy. In addition, the development of "on demand" economy (e.g., Uber), where the consumer creates new capacity by arranging a service that would not have been made in the first place, is in contrast with the idea of reducing the overall level of demand.
 - The reduction of prices generated by (i) increasing competition, (ii) reduced dependency on ownership, and (iii) reduction of searching costs, can contribute to the rise of consumption [10,40,106].
 - The easiest and cheapest access to goods and services can stimulate unsustainable and indulgent consumption [107,108]. The cost reduction and the accessible increase related to car sharing practices, for example, can generate additional journeys and reduce the public transport demand. The possibility to cover a part of the travelling cost, offered for example by Blablacar and Kangaride, can change the individual decision on the travelling mode and, as reported above, increase the demand for less sustainable practices [4,109].
 - The large amount of information made available by the use of the Internet, provides an extensive source of evidence about past usage patterns and consumers' preferences. The

online companies, with an easy access to consumer's information, can use targeted advertising and tailored promotions to increase sales and market share. In addition, a tension also exists in relation to the fact that city cycle schemes are usually financed through advertising of large and multinational corporations, as Santander in London or Coca-Cola in Belfast.

- B. Reduction of energy and material demand versus increased use of energy and resources: A lack of clear data investigating the environmental impacts of the sharing practices make it difficult to analyze the transition toward a more sustainable economy. At the present, no clear evidence exists around the reduction of energy and material demand [10]. On the contrary, a study published by [110] shows that the ecological footprint of e-business is greater than conventional shopping.
- C. Promote reuse and responsible consumption versus lack of care: The short-term social relationships characterizing most of the sharing economy activities and the fact that consumers are paying for a temporary service, generally lead to a lack of caring attitude and reduce the incentives to treat products gently [4]. In line with the idea of moral hazard and information asymmetries, involved with shared resources [111], the deterioration rate of goods can be higher than in the case of a private ownership. In addition, recent studies suggest that users' environmental motivations are often less important than the economic ones [112,113].

In Table 3, a summary of the elements discussed above is reported.

Table 3. Promises versus outcomes: Socio-economic and environmental impacts.

	Promises of the Sharing Economy	Outcomes of the Sharing Economy Practices
Economic impacts	<ul style="list-style-type: none"> A. Disrupt centralized institutions and large corporations B. Encourage small and local enterprise C. Empowering individuals by promoting flexible employment opportunities and additional sources of income D. Promote cheaper and easiest access to goods and services and provide opportunities for income redistribution, revenue, and savings 	<ul style="list-style-type: none"> A. Creation of oligopolies B. Small-business competition C. Working-related uncertainties D. Prices increase, income disparities, and tax avoidance
Social impacts	<ul style="list-style-type: none"> A. Increase social bonding and collaboration B. Increase conviviality and community trust C. Networking increases D. Promote the use of participative online resources such as open access, open sources, and collaborative platform 	<ul style="list-style-type: none"> A. Social drivers' reduction B. Discrimination C. Reduction of face-to-face interactions D. Income, cultural, and aging constraints
Environmental impacts	<ul style="list-style-type: none"> A. Reduce consumption B. Reduction of energy and material demand C. Promote reuse and responsible consumption 	<ul style="list-style-type: none"> A. Consumption increase B. Increased use of energy and resources C. Lack of care

Source: Author elaboration.

4. Discussion: Paradox of Scale and Future Research Directions

Based on the analysis reported above, the main findings of this paper can be summarized by the fact that the recent developments of the sharing practices seem to be in contrast with the theoretical frameworks used to define the socio-economic and environmental characteristics of sharing. When the scale expands, a profit-oriented logic seems to prevail and the idea of a more sustainable and socially connected economic system fails to be delivered. In particular, the profit opportunities are attracting an increasing number of for-profit businesses that use the socio-environmental and egalitarian statements as a way to increase the market share. In addition, the use of information and communication technologies, the related reduction of interpersonal connections, and the exclusion of people unable to catch up with technological development, impose constraints on social interactions and participation. As a result, the impacts and goals of the sharing economy seem to converge toward those of the traditional economic practices, where profit opportunities prevail on socio-environmental motivations. As previously highlighted by other authors [26,28], the theoretical

pathway to equity and sustainability has been successfully reframed as a new form of neoliberal capitalism.

Within this context, the findings of this paper highlight the risk of a paradox of scale, where the sharing economy fails to deliver as a consequence of success. If from one side, the more sustainable behaviors can generate effective changes only when applied by the majority of actors, on the other side, large-scale applications and expansion risk converging toward the traditional economic practices. This sort of trap is also highlighted by the recent path taken by the development of some local currencies. Initially organized as a way to sustain local business and promote a more responsible consumption, some of the local currencies have today expanded to include franchising and corporation activities. An example is provided by Colu, the Liverpool Local Pound, where franchising accounts for more than 10% of the businesses listed in the website. In addition, the percentage discount offered to consumers that purchase products by using the local currency is a stimulus for consumption increase, clearly in contrast with the idea of responsible consumption and sustainability. The use of virtual coins and the necessity to have mobile phones and internet connection also represent a factor of exclusion for the oldest and the less wealthy categories of society that in contrast would be those that could benefit the most from the development of a local and fairer economy.

The sharing economy phenomenon and the existing contradictions in the field of sustainability, create an interesting opportunity for future research directions. Some of the main research gaps that can be identified based on the analysis reported above can be summarized as follows:

From an economic perspective, additional researches would be needed to investigate the impacts on market structure and competition. In particular: A) The way in which small sharing activities can compete with large corporations in a market dominated by network externalities and economy of scale would require further attention. In addition, government intervention in regulating the market power of traditional and nontraditional companies would need to be revised in line with the heterogeneity characterizing the markets of sharing. The lack of common standards and regulations affecting the provision of sharing activities, such as fire regulation, hygiene, and health and safety standards, also represent an element of unfair competition discriminating the businesses operating in the traditional market system. B) The possibility to create local-scale production oriented to satisfy the regional demand without scaling-up the supply distribution chain could also be analyzed to support the development of a production system oriented to reduce the transport requirement of supply. C) The lack of labor and social security laws together with the unclear legislation on accident liability would also need to be analyzed both in terms of implications for workers and in terms of customer security. D) Finally, the existing difficulties in tracking the sharing transactions and the global nature of the marketplaces managed through the use of information technologies should be considered for the definition of a consistent taxation structure.

From a social perspective: A,B,C) The dynamics of social-bonding, collaboration, and community trust should be further investigated by accounting for the differences existing across sectors and geographical areas. Most of the analyses conducted so far have mainly been focused on specific case studies and a consistent overview of the social dynamic taking place for different economic activities and local realities still missing. The role of governments and private institutions should also be analyzed in relation to the equality of access, disability support, and nondiscriminatory policies. D) The possibility to develop an inclusive democracy based on open access, participation, and sharing should also be investigated in line with the potentials and constraints imposed by the development of information and communication technologies.

From an environmental perspective: A,C) Changes in individual consumption, such as demand increase, reduction of reuse, and a lack of caring attitude should be further analyzed across income categories, age groups, and geographical areas. B) The environmental impacts generated by unregulated sharing practices and the potential effects of business models characterized by a price reduction and diversification of supply, should also be considered in relation to energy and material demand.

In addition, a specific analysis should also be oriented to investigate how the impacts of sharing economy and degrowth, and the related paradox of scale, could diverge across regions and geographical realities. The discussion included in this paper provides a general overview of the possible risks and discrepancies existing between the theoretical promises and the impacts of practices. However, the extensive differences existing between developed and developing areas and the socio-cultural characteristics of regions could lead to the generation of different outcomes. The identification of good practices and constraints could then be used to support the design of targeted regional strategies oriented to increase the sustainability of the alternative economic solutions.

From a managerial perspective, the analysis of the main sustainability risks of large-scale applications of sharing economy and degrowth, could be used for the development of practices oriented to reduce the side effects of the alternative economic structures. The introduction of labor and social securities, together with mechanisms of cooperative support with a similar production of realities, could contribute to building a productive network counterbalancing the power of the existing oligopolies. In addition, the development of local production, focused on the use of territorial knowledge and resources, can contribute to strength in social trust and collaboration, and to promote a consumption environment focused on the protection of the local resources.

At the present stage, the lack of clear definitions and goals, the inclusion of a broad system of practices, and the limited availability of data, make it difficult to have a clear overview of the sustainability implications of sharing. For this reason, additional researches should be focused on the development of an empirical analysis oriented to estimate the scale of the sharing practices and the potential impacts on economy and society. As reported above, the limited availability of data and the broad range of practices, however, makes it difficult to provide a clear picture. For this reason, empirical estimation focused on local realities and specific economic sectors could be used as a first approximation. The involvement of stakeholders, such as producers, consumers, and local authorities can also provide a valuable source of information to support the development of empirical estimations.

That said, the analysis of the discrepancies existing between promises and practices, together with the development of empirical analysis and the identification of future research directions, can provide an important contribution to the debate around benefits and challenges of alternative economic structures. In particular, the discussion of the potential implications generated by the expansion of scale, can influence the perspectives of managers and policymakers, by making them aware of the possible downside of the sharing practices. A clear overview of the main socio-economic and environmental implications can then support the design of effective practices and regulations oriented to mitigate the negative impacts of sustainability solutions.

5. Conclusions

The sharing economy and degrowth have often been framed as promises for a more equitable and sustainable future. The feasibility and impacts of these alternative economic models, however, highlight a tension between the promises proposed by theories and the outcomes of generated practices. Mapping the links existing between sharing economy and degrowth and considering the main socio-economic and environmental impacts generated by the sharing economy, this paper discusses the feasibility of alternative economic models. In particular, by introducing a paradox of scale, where alternatives fail to deliver as a consequence of success, the present analysis provides a contribution to the debate around the feasibility of sustainable transitions. As reported above, the main limitations of this paper relate to the fact that sharing economy and degrowth are characterized by a broad system of practices, definitions, and goals. For this reason, the links and contradictions existing between them are probably richer than those included in the present analysis. In addition, the lack of clear data and estimations about the consequences of sharing economy and degrowth, particularly for large-scale applications, make it difficult to provide an exhaustive picture of the possible impacts. Being aware of that, the present paper offers a comparative analysis of two of the main socio-economic alternatives presently included in the academic, political, and business debates. In addition, by considering the sharing economy as an approximation of a large-scale application of

degrowth, the present paper contributes to the research line oriented to investigate the feasibility of alternative economic models. That said, further researches would be needed to investigate the way in which the sharing economy and degrowth have been framed and the impacts generated by practices. A further analysis would also be needed to investigate the role of governments and the ability to provide equality of access, disabilities support, and nondiscriminatory policies in a context of sharing and degrowth. In addition, the possibility to develop an inclusive democracy based on open access, sharing, and participation should also be investigated in line with the potentials and constraints imposed by the development of information and communication technologies. As reported above, sharing platforms and online participatory initiatives could be useful to promote the development of sustainable economic systems, only if supported by clear regulations and social inclusiveness.

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